

Residential Rooftop Solar Net Metering Proposals

July 2013



Background / context of discussion

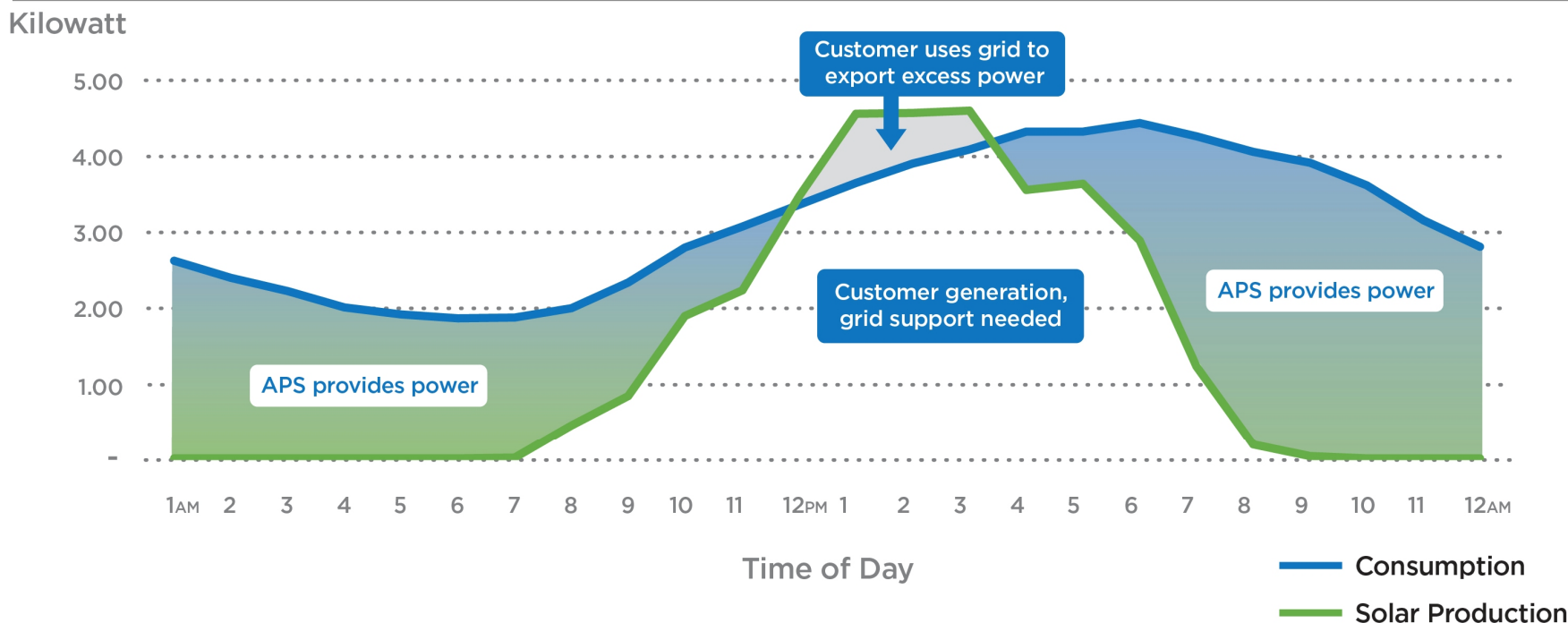
- Rooftop PV solar **installations have increased significantly each year** since January 2009
 - *January 2009*: Approx. 900 PV installations
 - *June 2013*: >18,000 total PV installations, averaging 500 new installations/month in 2013
- APS held **six workshops as part of the technical conference** to address emerging issues related to distributed energy (DE), net metering and RES surcharge
 - During the process, APS responded to more than **170 requests for detailed information** and publically posted all materials to the conference website
- APS's **proposed solutions are specific to residential customers only** because net metering unfairly shifts costs between these customers.
 - Business customers shift significantly less costs because infrastructure costs are recovered through demand charges

The issue is about customer fairness

- Customers with rooftop solar systems **do not pay for all of the electric services they use**
- These **unpaid costs are then paid by other customers** (through higher rates) that can't have or don't want solar
- This issue will only get **bigger over time**
- Need to send an **accurate price signal** to customers that wish to invest in rooftop solar

Rooftop solar customers still use the grid 24 hours a day

TYPICAL GRID INTERACTION FOR ROOFTOP SOLAR



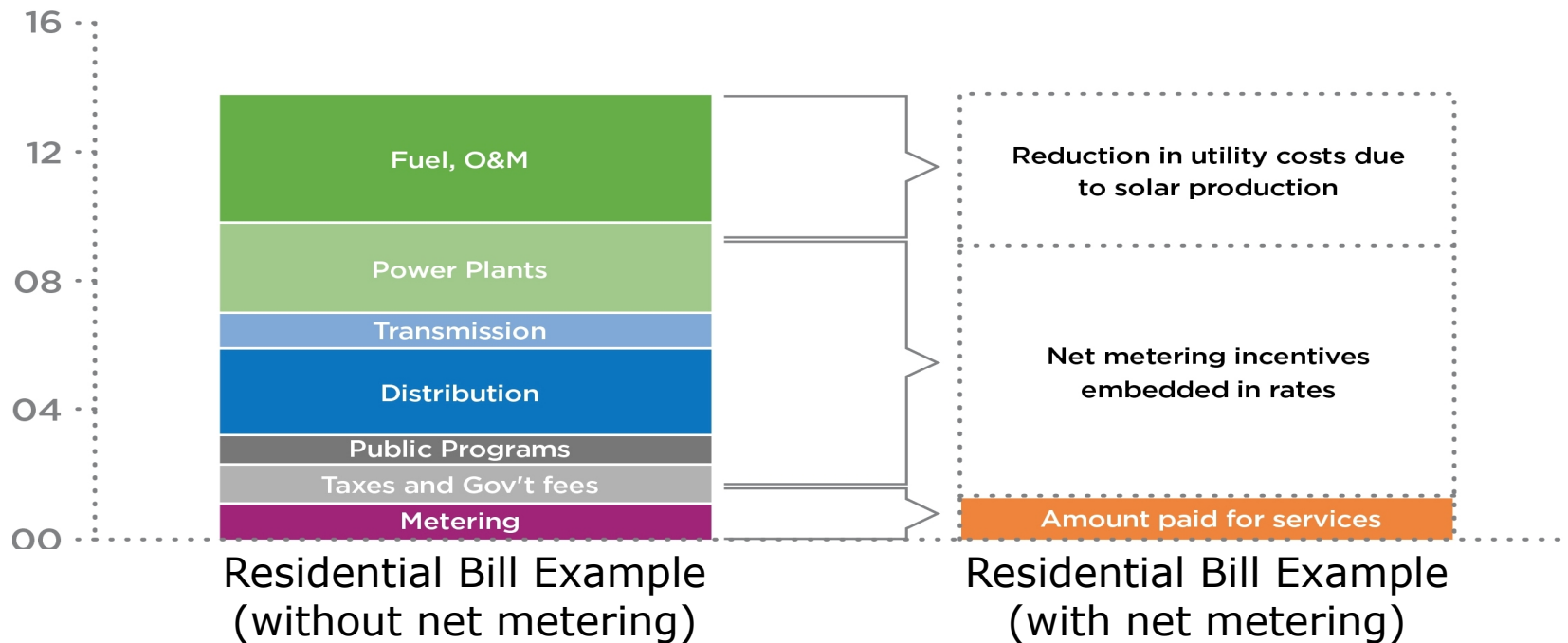
- **Solar customers use the grid** to receive energy and export solar generation
- Rooftop solar generation is **variable and limited**, and thus solar customers effectively **use the grid as a "battery"** – and should pay for that use
- Rooftop solar customers **should get compensated at a fair rate** for the power they sell and **also pay a fair price for their use of the grid**

Rooftop solar provides only a portion of total utility services

- Rooftop solar provides fuel and a portion of power plant costs
- However, net metering allows a customer to avoid paying for all of the services, except metering and the RES surcharge

AVERAGE RESIDENTIAL RATE

(cents/kWh)



Under net metering, customers do not pay for all services used

Rooftop solar reduces some utility costs...

...but, DE customers can "net meter" almost their entire bill

RESIDENTIAL BILLING ELEMENTS	CHARGE TYPE	WHAT APS SAVES FROM ROOFTOP SOLAR PRODUCTION	WHAT ROOFTOP SOLAR CUSTOMERS DO NOT PAY
Base Rates:			
Metering and Billing	Monthly		
Distribution	kWh		✓
Transmission	kWh		✓
Public Benefits Programs	kWh		✓
Power Plants	kWh	Partial	✓
Fuel, O&M	kWh	✓	✓
Adjustments:			
Renewables	kWh, Capped		
Fuel	kWh	✓	✓
DSM	kWh		✓
Environmental Improvement Surcharge	kWh		✓
Transmission	kWh		✓
LFCR (Public Benefits Programs)	%		✓
Taxes and Government Fees:			
Regulatory Assessment Fee	%	NA	✓
Franchise Fee	%	NA	✓
Sales Taxes	%	NA	✓

The magnitude of the issue continues to compound annually

500

Average number of new net metered customers added each month (2013)

\$1,000

Costs a typical solar customer avoids per year for services they still use

\$18M

Approximate current costs being shifted to non-solar customers today

\$6-10M

Approximate cost growth added annually for every year this is unresolved

Non-solar customers will pay for these unpaid costs in the form of higher rates

APS considered many options

Guiding principles

- Address the **fairness issue / cost shift** across customers
- Ensure that **incentives are transparent**
- Supply energy to customers at **minimal cost**
- Be **robust and adaptable** in the long-term

Net Metering

- Existing or new retail rate schedules can be **used to appropriately recover the cost of service**
- **Time Variant**
- **Basic Service Charge**
- **Demand Charges/Standby**

Bill Credit

- Customer's **total electrical needs served by the utility** at retail rate
- Total rooftop solar generation is exported to the grid and **purchased by the utility at a market price**
- Net metering not required
- Market based
- Value based

Proposed options

Net Metering Option:

or

Bill Credit Option:

What it is:

- All customers who install new rooftop solar systems would take service under the existing demand-based rate schedule (ECT-2)

- All customers who install new rooftop solar systems can choose any existing rate schedule for service
- APS will purchase all rooftop solar generation from customers at current market price with possible adjustments

Why this option:

- Addresses a meaningful portion of cost shifting through use of an existing, demand-based rate schedule
- Allows customers to net meter / self supply

- Enables greater flexibility in matching costs, and therefore reducing cost shifting
- More accurate price signal to potential rooftop solar customers

Policy proposals

No changes to commercial net metering

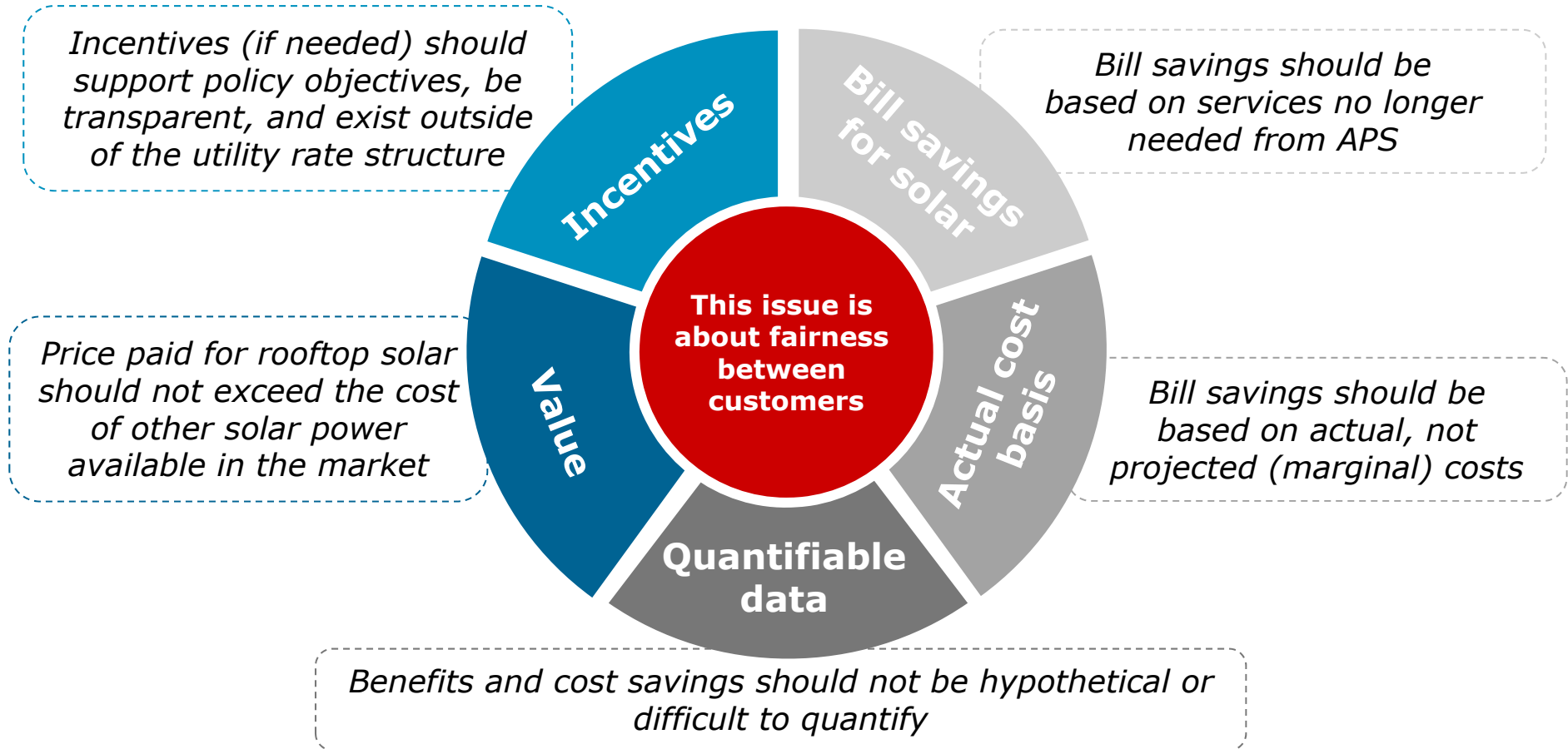
Grandfathering of residential rooftop solar customers

- All existing customers and new customers who submit an interconnection application and provide a signed contract with a solar installer by 10/15/13 and interconnect within 180 days of that submission
- Duration will be for 20 years
- Non-transferable
 - The policy exists for the homeowner, not for the system. If the customer sells their house the new homeowner will not be grandfathered in

Support for up-front cash incentives

- Need to be transparent
- Adjustable by ACC based on market uptake

Customer Fairness



Conclusion

What is the issue?

- Today, residential customers with rooftop solar systems **do not pay the true cost of electric services they use**
- Thus, **non-solar customers unfairly pay** for these avoided services in the form of higher rates

Why address this now?

- The magnitude of this **issue is already large** (~\$18M) and **will continue to grow at a rapid pace** (~\$6-10M in costs added annually at today's pace)

What is APS's proposed solution?

- Two residential proposals:
 - Net Metering option: All new rooftop solar customers would take service under the existing ECT-2 rate schedule **OR**
 - Bill Credit option: Purchase solar generation from new rooftop solar customers at current market price with adjustments
- Grandfather qualifying existing residential rooftop solar customers
- Support upfront cash incentives